

# **In-water Spectral Radiance Distribution Measurements**

**Kenneth Voss and Howard Gordon  
Physics Dept.  
University of Miami**

**MODIS OCEANS, 1/23/01**

# **Satellite Vicarious Calibration**

**Make measurements of all relevant parameters**

**-Atmospheric parameters**

**Aerosol properties**

**Ozone Transmission**

**Humidity**

**-Surface Parameters**

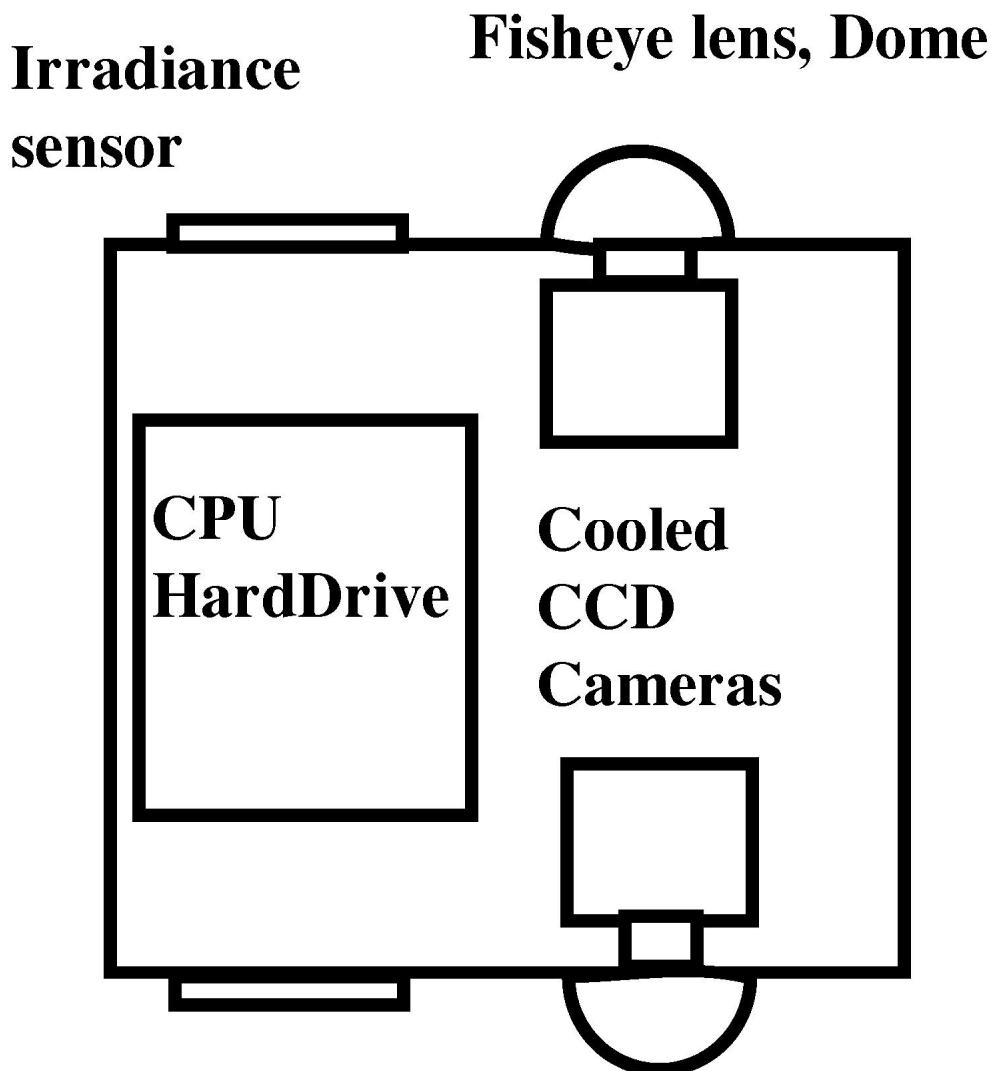
**Waves, whitecaps**

**-Upwelling light field**

**Nadir radiance(?)**

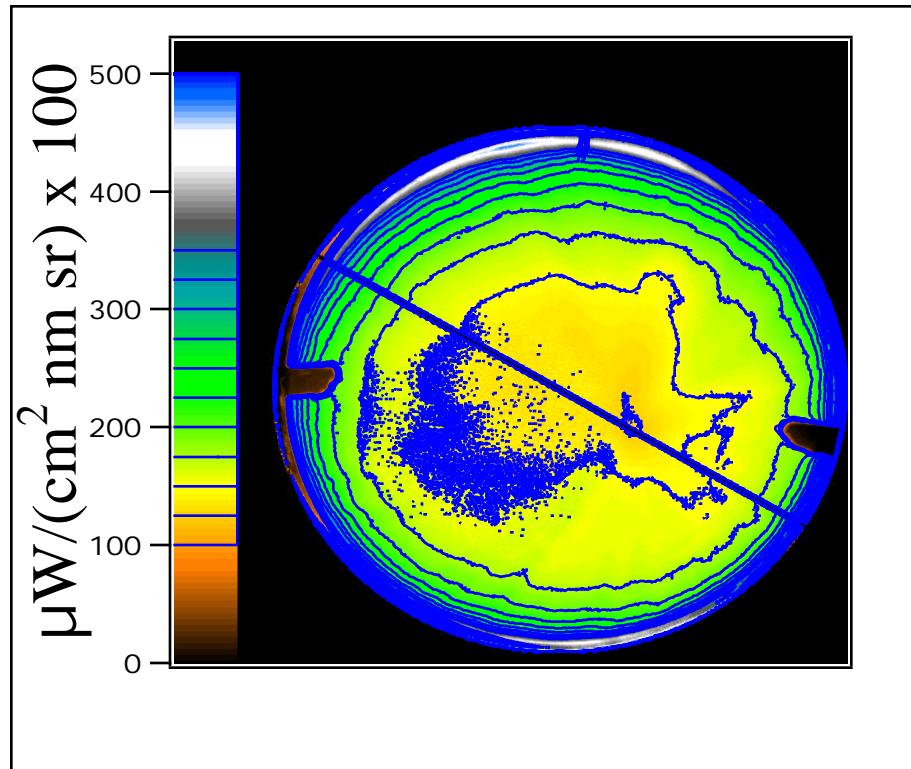
# **Radiance Distribution Camera System (RADS II)**

**Cooled CCD Arrays (528 x 528)  
Spectral filter (4 interference filters)  
Irradiance sensor to check calibration  
Integral Hard drive, CPU(80486)  
Tilt, Roll, Compass, Temperature, Depth**

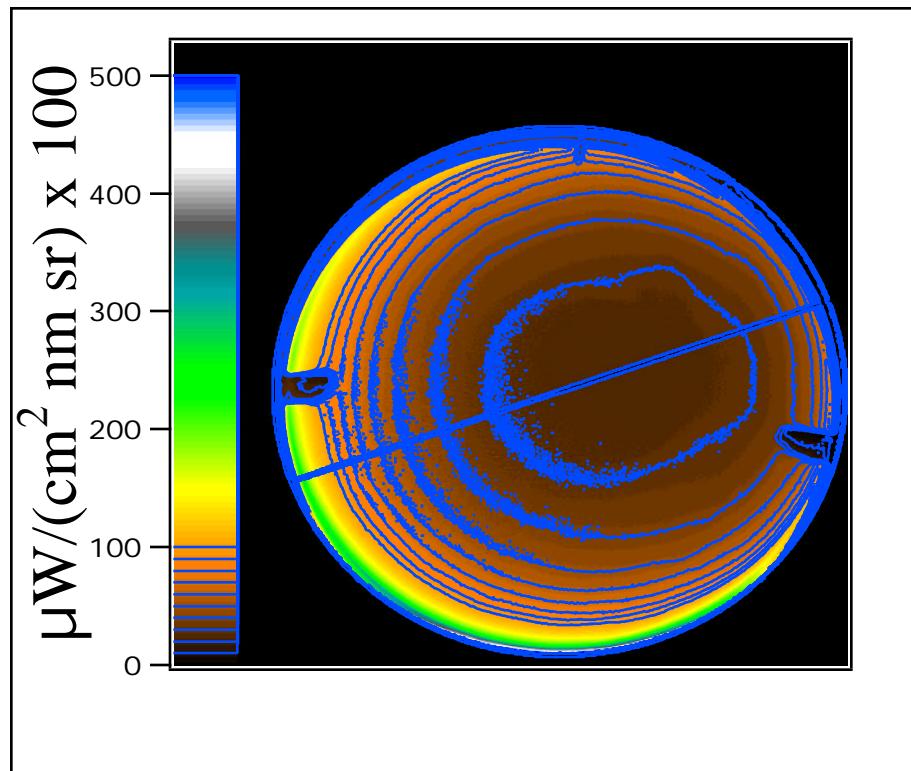


## Example Radiance Distribution, 500nm

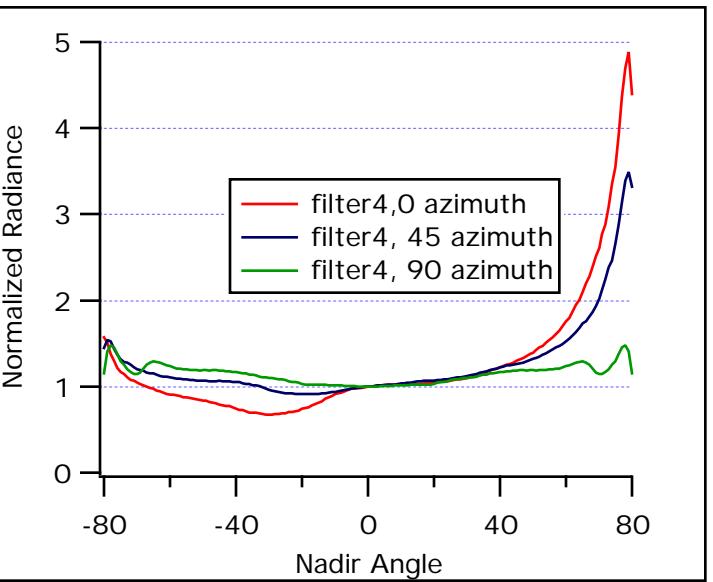
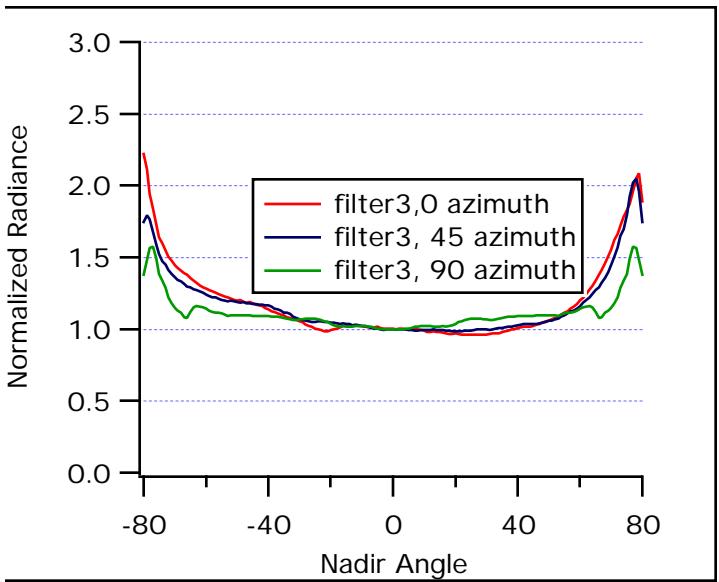
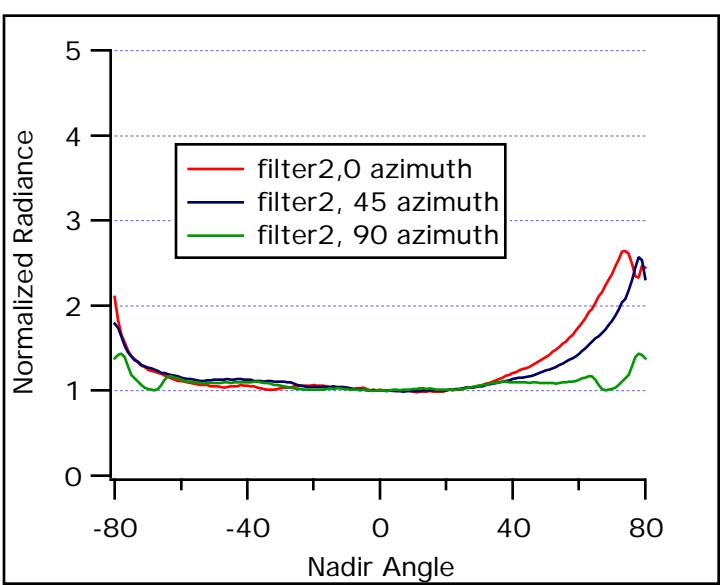
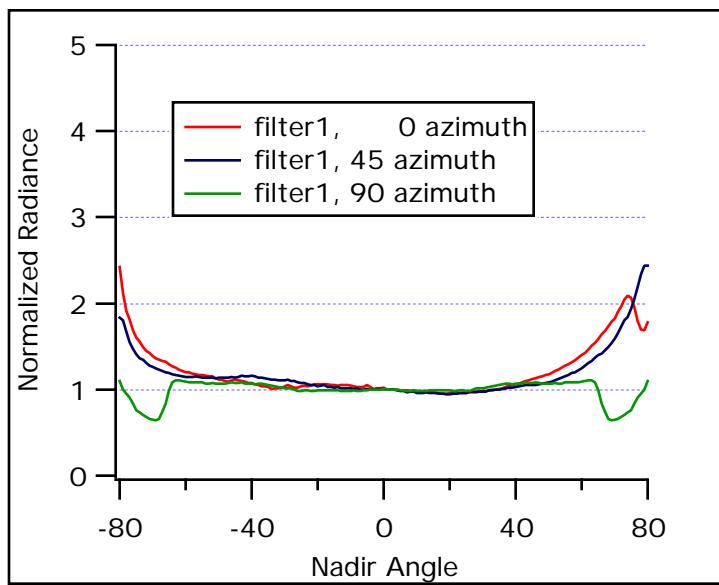
Low Chl (0.3 mg/m<sup>3</sup>)



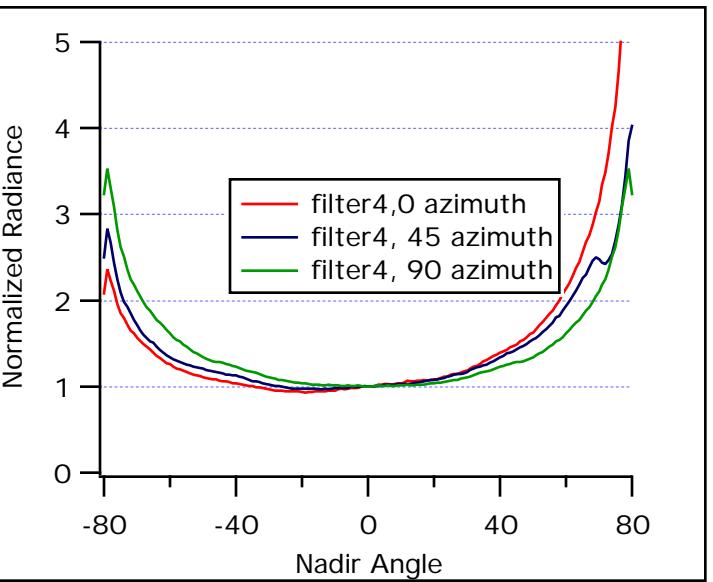
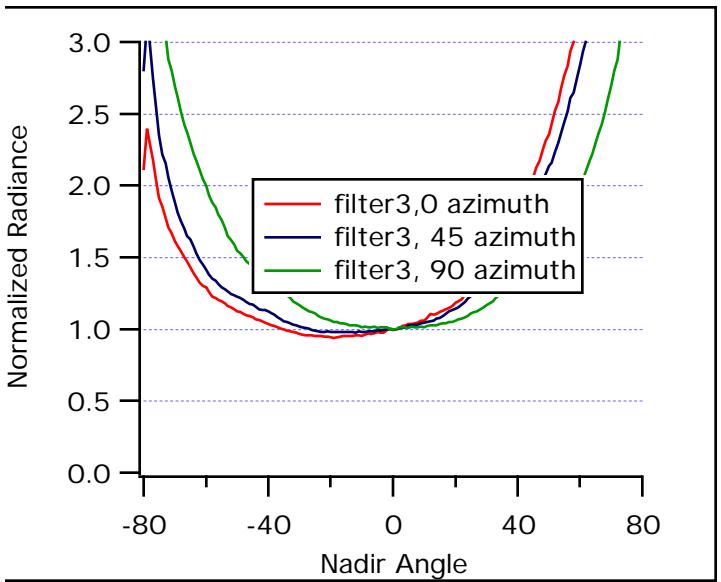
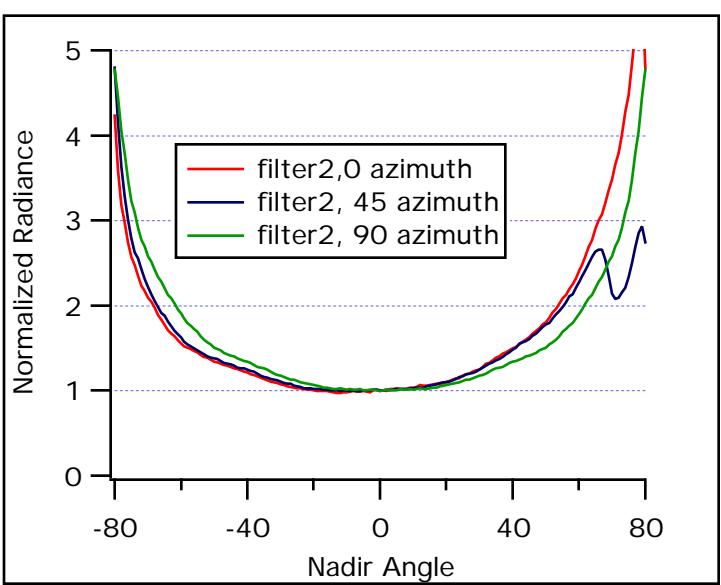
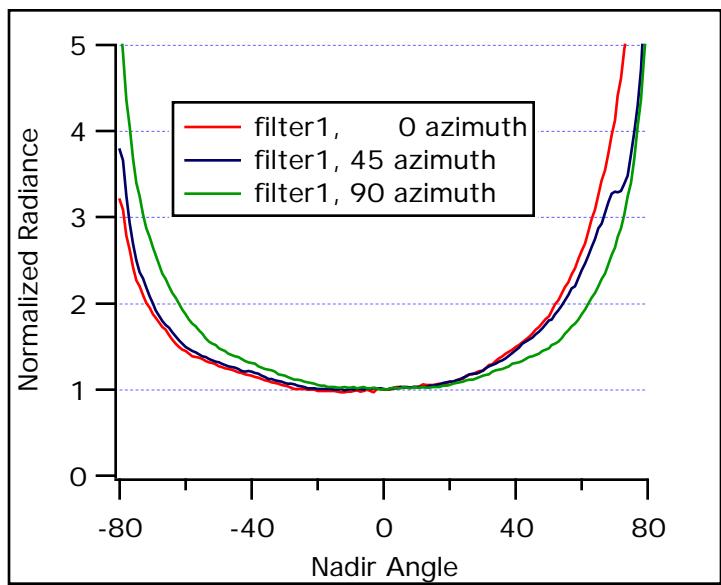
High Chl (5 mg/m<sup>3</sup>)



Station 4  
Chlorophyll =  $0.14 \text{ mg/m}^3$   
solar zenith = 29 deg



Station 8  
Chlorophyll =  $4.88 \text{ mg/m}^3$   
solar zenith = 29 deg



MODIS, Scan line geometry,  
Variation with Latitude,  $0^{\circ}$  to  $80^{\circ}\text{N}$

